REMARKS

The undersigned thanks Examiner Sisson for withdrawing the rejections in the Action of April 23, 2007. The undersigned also thanks Examiner Sisson for the courtesies extended during the telephone interview of November 19, 2007, when the Examiner provided helpful suggestion for overcoming the pending rejections. These suggestions of the Examiner have been fully implemented in the present Amendment.

Independent claims 46, 56, 66 and 76 have been amended to recite that "complimentary nucleotides have different mass labels that are attached to the complimentary nucleotides throughout a plurality of cycles of said method for sequencing nucleic acid." This underlined limitation is supported by paragraph [0035] of the specification which states that "[t]he identity of an incorporated labeled nucleotide 218 may be determined from the distinctive change in mass and/or surface stress of the structure 116, 212." This statement means that the mass labels are attached to the complimentary nucleotides during the method for sequencing nucleic acid in order for the identity of an incorporated labeled nucleotide 218 be determined from the distinctive change in mass and/or surface stress of the structure 116, 212. In addition, the limitation "throughout a plurality of cycles" is supported by paragraph [0037] of the specification.

New claims 90 to 94 are supported by paragraph [0040] of the specification.

Claim Rejections - 35 USC 103

Claims 46-85 were rejected as being obvious over Allen in view of Köster and Monforte. This rejection is respectfully traversed.

The Examiner acknowledges that Allen fails to teach mass labels or the use of 3'

blocking groups. See paragraph 8 of the Action. The Examiner attempts to fill these gaps in Allen by resorting to Köster and Monforte. However, both Köster and Monforte relate to releasable mass labels that are *released during the DNA sequencing*. On the other hand, in the method of the claimed invention the *mass labels are attached to the complimentary nucleotides throughout a plurality of cycles of said method for sequencing nucleic acid* as recited in independent claims 46, 56, 66 and 76.

Furthermore, the DNA sequencing methods of Allen and the present invention are totally different from those of Köster and Monforte. The DNA sequencing methods of Allen and the present invention rely on *a cantilever method* to detect increment of mass by the addition of a nucleotide. On the other hand, the methods of Köster and Monfort rely on *mass spectroscopy* wherein a mass label is released during DNA sequencing for the determination of a DNA sequence. The cantilever method of Allen and the mass spectroscopy methods of Köster and Monfort operate on totally different mechanisms. In the cantilever method of Allen, the identity of a nucleotide is determined by "a local sensitive force detector capable of reliably detecting the incorporation of a nucleotide of interest into a growing polynucleotide chain." See column 4, lines 24-27, of Allen. On the other hand, in the mass spectroscopy methods of Köster and Monfort the identity of a nucleotide is determined by releasing a releasable mass label during DNA spectroscopy. Thus, Allen's cantilever method is *not* combinable with the mass spectroscopy methods of Köster and Monfort. As a result, even if a person of ordinary skill in this art would have been motivated to combine Allen with Köster and Monfort, which Applicants respectfully disagree, one would not have arrived at the claimed method of the present invention.

New claims 86-89 are supported by original claim 9. These new claims recite that the mass labels are selected from the group consisting of nanoparticles, nanoparticle aggregates, carbon nanotubes, fullerenes, functionalized fullerenes, functionalized fullerenes, quantum dots, dendrimers, and combinations thereof. Please note that the releasable mass labels of Köster and Monfort are totally different from the attached mass labels recited in new claims 86-89.

Please note that in paragraph [0040] of the specification, Applicants recognizes that there could be some potentially inoperative embodiments within the scope of the claims due to the possible effects of steric hindrance from the bulky groups used for labeling. However, as explained in MPEP 2164.08(b) , "The presence of inoperative embodiments within the scope of a claim does not necessarily render a claim nonenabled. The standard is whether a skilled person could determine which embodiments that were conceived, but not yet made, would be inoperative or operative with expenditure of no more effort than is normally required in the art. *Atlas Powder Co. v. E.I. du Pont de Nemours & Co.*, 750 F.2d 1569, 1577, 224 USPQ 409, 414 (Fed. Cir. 1984) (prophetic examples do not make the disclosure nonenabling)." In the present case, Applicants have provided a work-around to potentially inoperative embodiments by stating that after 10 cycles, for example, of the method for sequencing nucleic acid, "the labeled nucleotides 218 may be removed, for example by exonuclease activity, and replaced with unlabeled nucleotides 218 by exposure to solutions containing single unlabeled nucleotides 218." See paragraph [0040] of the specification.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: December 28, 2007

Respectfully submitted,

By /Raj S. Davé/
Raj S. Davé
Registration No.: 42,465
DARBY & DARBY P.C.
P.O. Box 770
Church Street Station
New York, New York 10008-0770
(212) 527-7700 (Phone)
(212) 527-7701 (Fax)
Attorneys/Agents For Intel Corporation